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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,076	06/26/2001	Mitsugu Hanabusa	1232-4729	2219

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EXAMINER

ROSARIO, DENNIS

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/892,076

Applicant(s)

HANABUSA, MITSUGU

Examiner

Dennis Rosario

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005 and 19 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12, 15-19 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 15-19 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/30/04 & 3/17/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The resubmitted amendment of the un-entered original amendment of July 21, 2004 was entered on August 19, 2005. The supplemental amendment to the 7/21/2004 amendment was entered on March 17, 2005. Wherein the supplemental amendment, claims 12,15-19 and 22-25 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 12 and 22 have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

3. The cited document that was missing in the last office action has been considered and annotated on the respective IDS sheet.

Claim Objections

4. Due to the amendment the objection to claim 14 is withdrawn since claim 14 is canceled.

Drawings

5. Figures 4 and 14-21 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: CDD Array.

7. Due to the amendment the objection to the specification is withdrawn.

However, upon further review new objections to the specification have arisen:

Page 1, line 14: "scans the CDD" does not make sense. Does the applicant mean scanning with a CDD?

Page 14, line 27: "image" ought to be amended to "image data".

Page 21, line 4: "tochange" ought to be amended to "to change".

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 does not appear to be physically possible since the claimed pulse supply unit of fig. 7, numerals 10-12 of the specification is understood to input a signal into fig. 7, num. 6c and the claimed first element array of fig. 7, num. 6a appears to be out of place in any signal from it were to be inputted into the claimed pulse supply unit so that the pulse supply unit can continuously output signals. Thus, claim 25 will be interpreted as claim 24.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 12,15,16 and 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Weimer (US Patent 4,242,700 A).

Regarding claim 22, Weimer discloses a processing method for an image processing apparatus including a first element array having a plurality of photoelectric conversion elements arranged in a line, a second element array shifted from the first element array by a predetermined distance in a main scanning direction and having a plurality of photoelectric conversion elements arranged in a line, a first shift register, and a second shift register, comprising steps of:

a) transferring image signals (fig. 6, label: row 1) from said first element array (fig. 6, num. H₂) to said first shift register (fig. 6, num. 94) and from said second element array (fig. 6, label: row 3) to said second shift register (fig. 6,num. 96), in parallel (since the architecture of fig. 6 is in parallel); and

b) serially transferring the image signals in said first and second shift registers in accordance with at least three types of transfer pulses (fig. 6, labels: G₁ thru G₄) so as to add signals(or "combine...[charges]" in col. 9, line 62) from adjacent elements (fig. 3, numerals 1 and 2) together during serially transferring the signals in said first and second shift registers (fig. 3,num. 20 represents one of said registers).

Regarding claim 12, Weimer discloses an image processing apparatus comprising:

- a) a first element array (fig. 6, label: ROW 1) having a plurality of photoelectric conversion elements arranged in a line;
- b) a second element array (fig. 6, label: ROW 4) shifted from said first element array by a predetermined distance in a main scanning direction and having a plurality of photoelectric conversion elements arranged in a line;
- c) a first shift register (fig. 6,num. 94) for serially transferring signals from said first element array in response to transfer pulses (as shown in fig. 3, labels: a, b and c)
- d) a second shift register (fig. 6,num. 96) for serially transferring signals from said second element array in response to the transfer pulses; and
- e) a pulse supply unit (fig. 4, labels G_1 and H_2 and φ_1) for supplying at least three types of the transfer pulses (as shown in fig. 7, labels G_1 and H_2 and φ_1) having different phases (as shown in the timing chart since the signals are different from each other) to said first and second shift registers; and

f) a driving circuit ("diffused blooming buses" in col. 9, line 66) for inputting said at least three types of the transfer pulses (since the buses are "inserted" in col. 9, line 68 in the place of the channel stops as shown in fig. 11, label: CH.STOP, the buses serve as the foundation for inputting the said transfer pulses) having different phases to said pulse supply unit and performing control to add signals ("combine...[charges]" in col. 9, line 62) from adjacent elements (as shown in fig. 3, numerals 1 and 2) together during serially transferring the signals in said shift register (as represented by the horizontal arrow in the bottom right of fig. 3).

Regarding claim 15, Weimer discloses the apparatus according to claim 12, wherein said pulse supply unit can supply two pulses having different phases to said first and second shift registers so as to output signals from said first and second element arrays without addition (as shown in fig. 3, num. 44).

Claim 16 is rejected the same as claims 12, step f) and claim 15. Thus, argument similar to that presented above for claims 12, step f) and claim 15 is equally applicable to claim 16.

Regarding claim 23, Weimer discloses the apparatus according to claim 16, wherein at least one type of the transfer pulses supplied by said pulse supply unit in the first transferring mode has a frequency which is twice as high (as shown in fig. 7, label φ_1) as that of the transfer pulses (as shown in fig. 7, label: "G₁") supplied in the second transferring mode.

Regarding claim 24, Weimer discloses the apparatus according to claim 16, wherein, in the second transferring mode, said pulse supply unit alternately repeats a first operation of continuously outputting signals (as shown in fig. 7, label: G₁) from the first element array, and a second operation of continuously outputting signals (as shown in fig. 7, label: G₁) from the second element array.

Claim 25 is rejected the same as claim 24. Thus, argument similar to that presented above for claim 24 is equally applicable to claim 25.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 17, 18 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Weimer (US Patent 4,242,700 A) in view of Roustaei (US Patent 5,354,977 A).

Regarding claim 17, Weimer does not teach the limitation of claim 17 but does teach "light project[ion is well understood in the art" in col. 3, line 22.

Thus, Weimer suggests to one of ordinary skill in the art to find a teaching of projecting light that can be found in the art.

Roustaei teaches projecting light as shown in fig. 1 and claim 17:

- a) a light source (fig. 1, num. 4) for irradiating an original with light; and
- b) imaging means (fig. 8, num. 18) for forming light reflected by the original into an image on said first and second element arrays (fig. 8, num. 20).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Weimer's teaching of light projection with Roustaei's teaching of light projection, because Roustaei's teaching of light projection enables "accurate scanning" in the abstract.

Regarding claim 18, Roustaei of the combination teaches the apparatus according to claim 17, further comprising:

- a) analog gain control means (fig. 8,num. 54) for controlling an analog gain of a signal output from said first and second element arrays; and
- b) an analog/digital converter(fig. 8,num. 58) for digitizing the signal controlled by said analog gain control means.

Regarding claim 19, Roustaei of the combination teaches the apparatus according to claim 18, further comprising:

- a) shading correction means (fig. 8.num. 55) for performing shading correction for the digitized signal.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Morishita et al. (US Patent 5,283,428 A) is pertinent as teaching a method of a "three-value pulse signal" in col. 10, line 34 photosensor cell as shown in fig. 5 that is capable of being "stag-gered" in col. 22, lines 4,5.

Kosonocky et al. (cited IEEE article) is pertinent as teaching a method of a three-phase register and adding or collecting charges as shown in fig. 3a.

Bosiers et al. (cited IEEE article) is pertinent as teaching a three-phase cell and adding charges as described in section III, B.

Orihara et al. (cited IEEE article) is pertinent as teaching at least three phases as shown in fig. 1 on the left and bottom sides of the figure and adding charges as shown in fig. 6.

15. Applicant's amendment of adding "during serially transferring the signals" necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

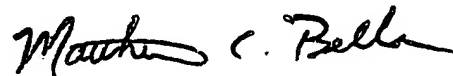
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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dennis Rosario
Unit 2624

A handwritten signature in black ink, appearing to read "Matthew C. Bella".

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600